



SCN60 Residential Nugget Ice Machine

SCN60 Nugget Ice

- Nugget Ice
 - What it **isn't**: Ice frozen in a mold
 - What it **is**: A chewable ice, formed continuously by forcing soft ice thru tapered holes.

Components

- Compared to cube ice machines:
 - **No** spray pump
 - **No** spray jets
 - **No** hot gas valve
 - **No** inlet water solenoid valve
- But it does have:
 - Auger
 - Gear reducer
 - Float valve

SCN60 Cabinet

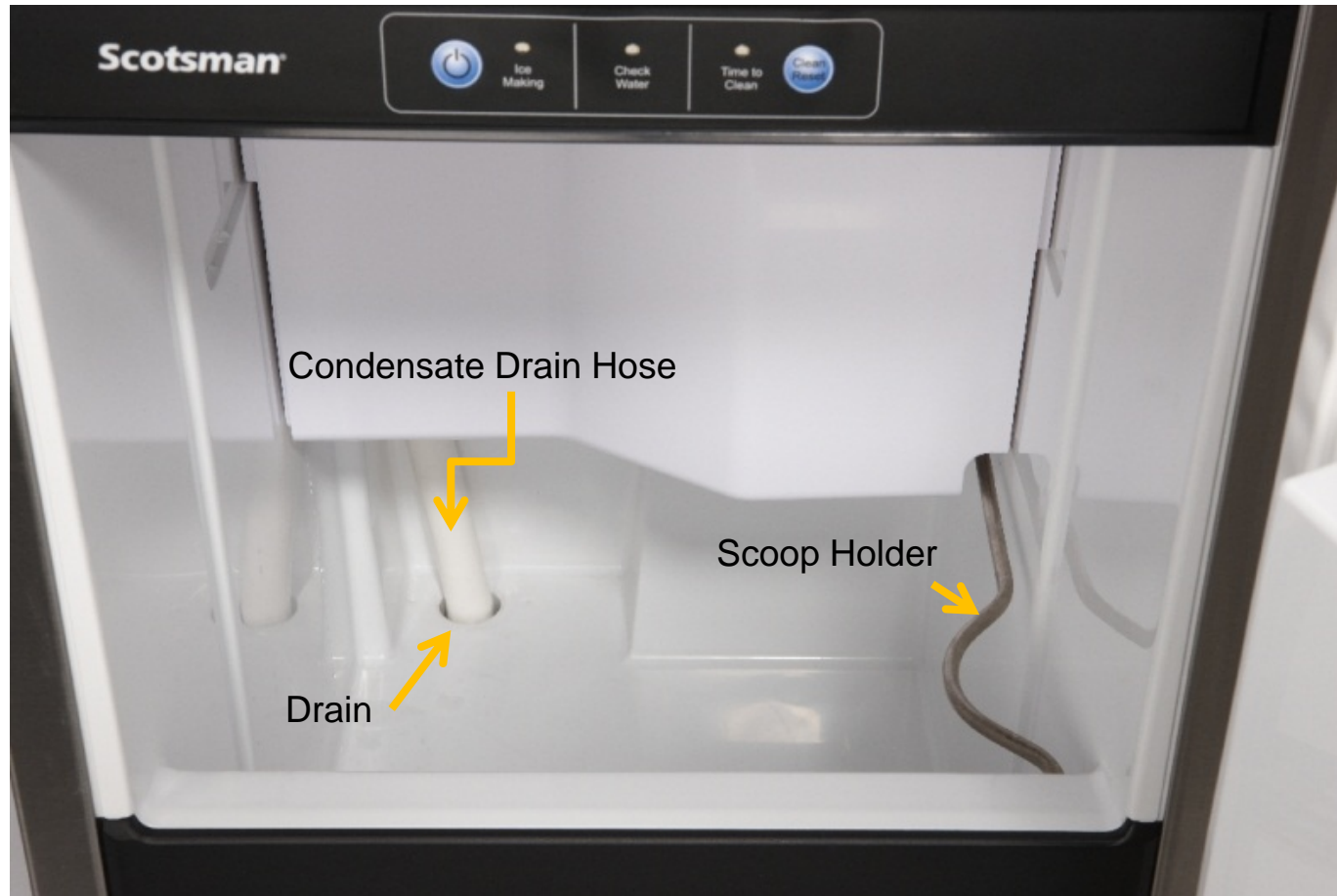


- 15 inch wide cabinet
- Can be built in – air in and out the front
- Service panel on side
- Finishes
 - Unfinished door
 - For decorator door
 - Stainless door

In the Bin



In the Bin

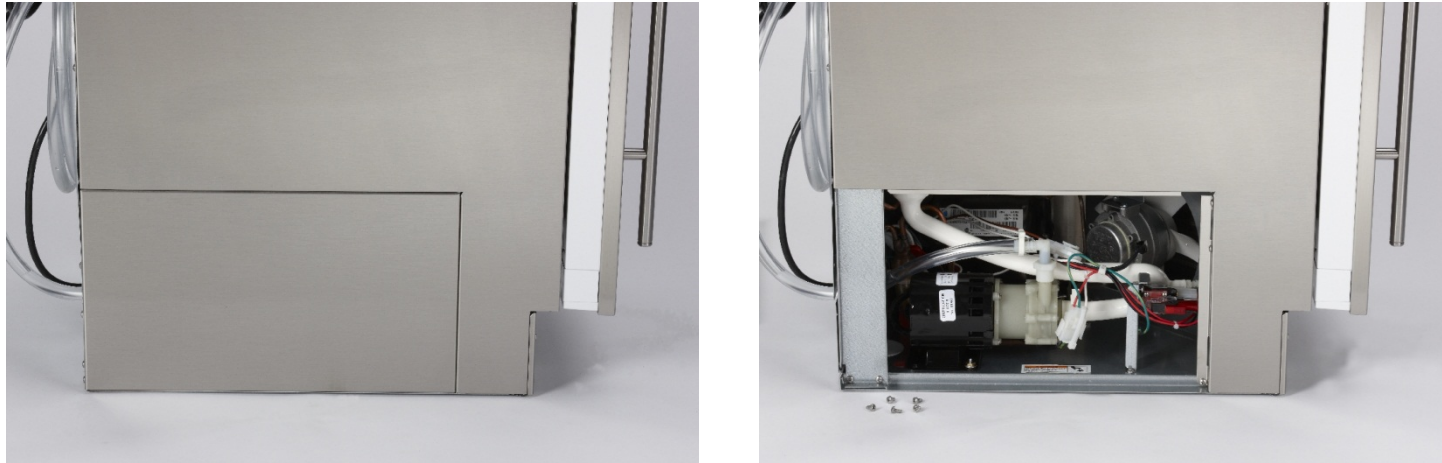


Cabinet

- Air in and out the front
- Front Service Panel
- Kickplate
 - Access to condenser



Side Service Panel



Provides access to bin drain, drain pump (when used), fan motor and compressor.

Side access panel now on ALL SC Models!!

Reverse Door Swing

- Remove hinge covers
- Loosen the screw on the keyhole slot, remove the other
- Pull door from unit
- Switch hinges on door



Reverse Door Swing

- Remove top panel
- Remove and replace top bracket



Reverse Door Swing

- Remove and replace lower door bracket
 - New brackets shipped loose inside the bin
 - Hardware package includes opposite door hinge covers, 90 degree door stop pin & leveling leg caps



Door Panel

- Unfinished units are shipped without door covers
 - Use White, Black or Stainless Scotsman panel kits
 - Panel kits include hole covers



Kit Number	Panel Finish	Handle Finish
KDFW	White	White
KDFWS	White	Stainless Steel
KDFB	Black	Black
KDFBS	Black	Stainless Steel
KDFS	Stainless Steel	Stainless Steel

- Make and attach a

Installation

- **Power**
 - 115 volt model with power cord
- **Water**
 - ¼" OD copper tube on back, compression fittings in attached bag
- **Drain**
 - Gravity model
 - Pump model or kit

Electrical

- 115 volt, 60 Hz power
- Unit must be on separate 15 amp circuit
- Outlet should be accessible or must use circuit breaker to shut off power during service
- No extension cords permitted

Water Supply Connection



- Connection on back
- Compression fitting shipped with unit
- 20 to 80 lb pressure
- Coil inlet tubing to this fitting when unit built in

Drain

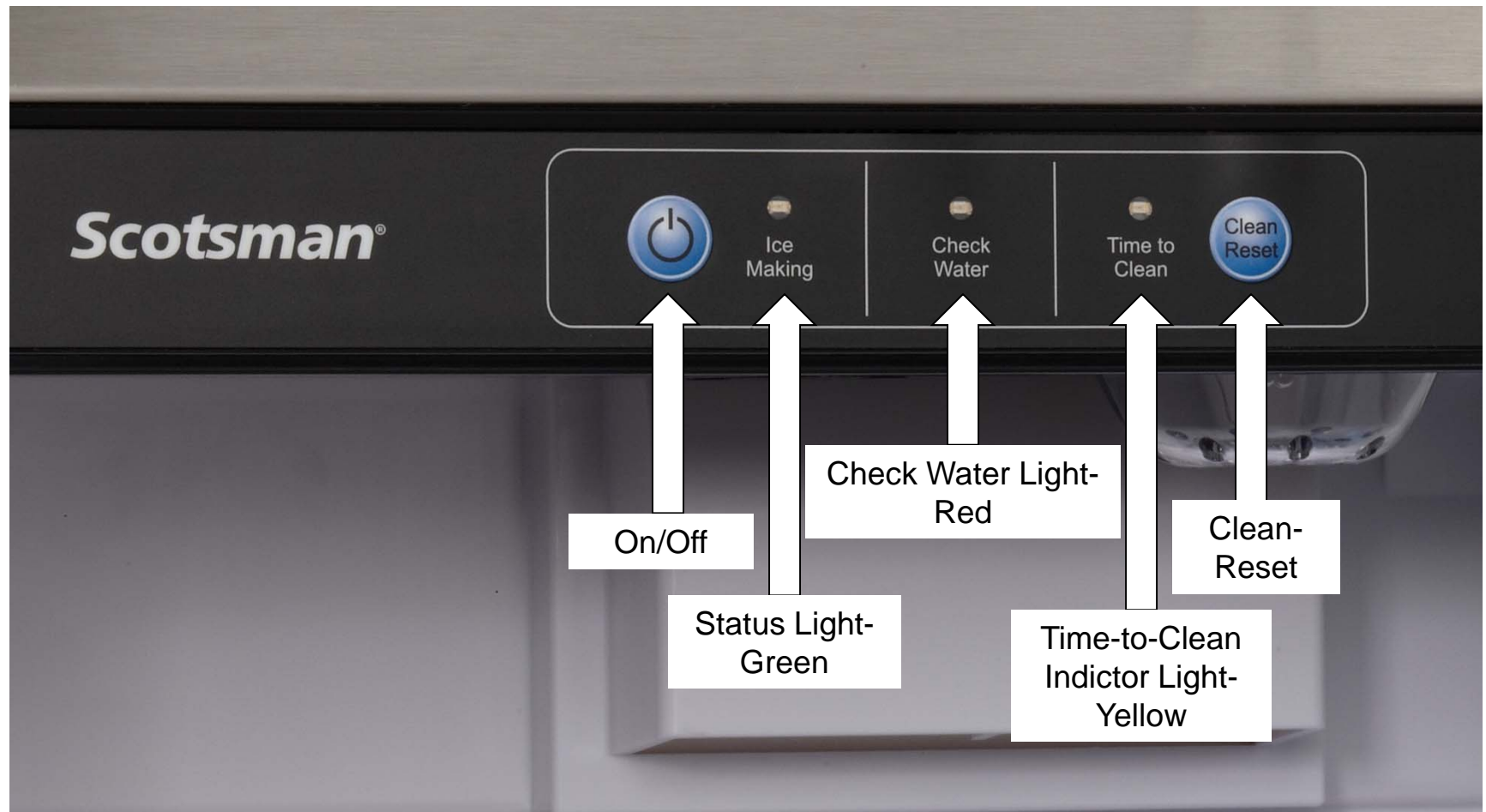
- Gravity

- Connect to hose inside cabinet-field supplied
- Drain tubing must not trap water
- Vent and use rigid tubing outside of cabinet
- Route and slope to drain
- Maintain code air gap

- Drain Pump

- Hose pre-connected
- Route to drain
- Maintain code air gaps
- Pump will activate when water backs up into inlet hose

Control Panel



Initial Start Up

- Connect power
 - Panel lights blink
- Turn on water supply
- Push On-Off button
 - Ice making light switches ON
- Compressor, Fan Motor and Auger Drive Motor operate
- In about 10 minutes ice will begin to fall into the bin

Control Panel – Ice Making Mode



- **Green Light**

- Indicates ready to make ice
- Does not indicate operation, bin full or empty

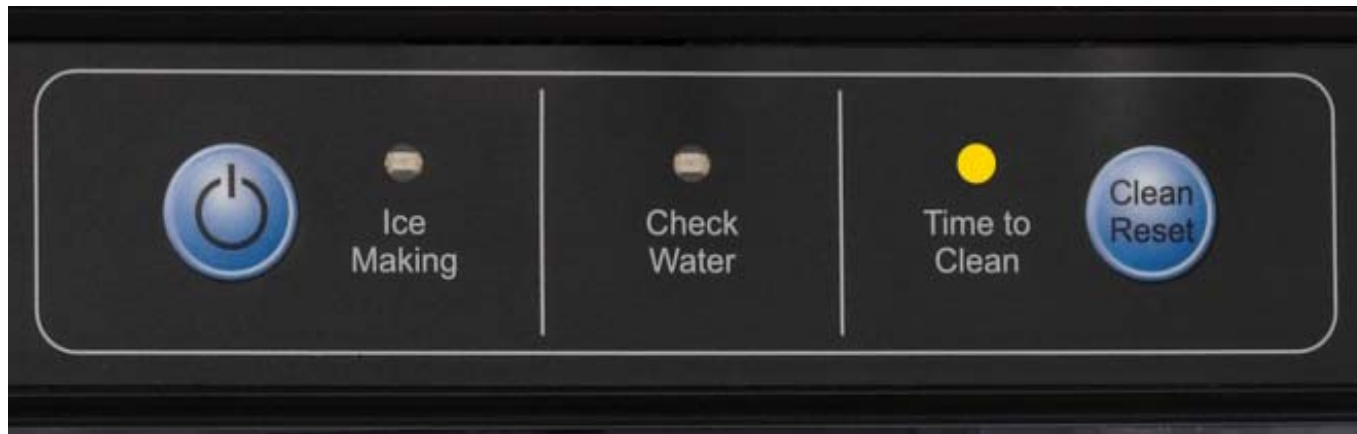
Control Panel – Check Water



- Red Light

- Indicates Lack of Water to Machine
- No ice will be made while light is on
- Restarts automatically when water restored

Control Panel – Time to Clean



- Yellow Light

- On after 6 months of power up time
- Indicates the machine needs to be cleaned
 - Scale removed
 - Condenser cleaned
 - Unit sanitized

Ice Making Components

- **Evaporator**

- Stainless steel refrigerated tube with vertical riflings
- Refrigeration coil wrapped on outside of tube & foamed

Refrigeration outlet

Refrigeration inlet

Water inlet



Ice Making Components

- Auger

- Double-flighted, solid stainless steel auger



Water Seal

Ice Making Components

- Breaker Head

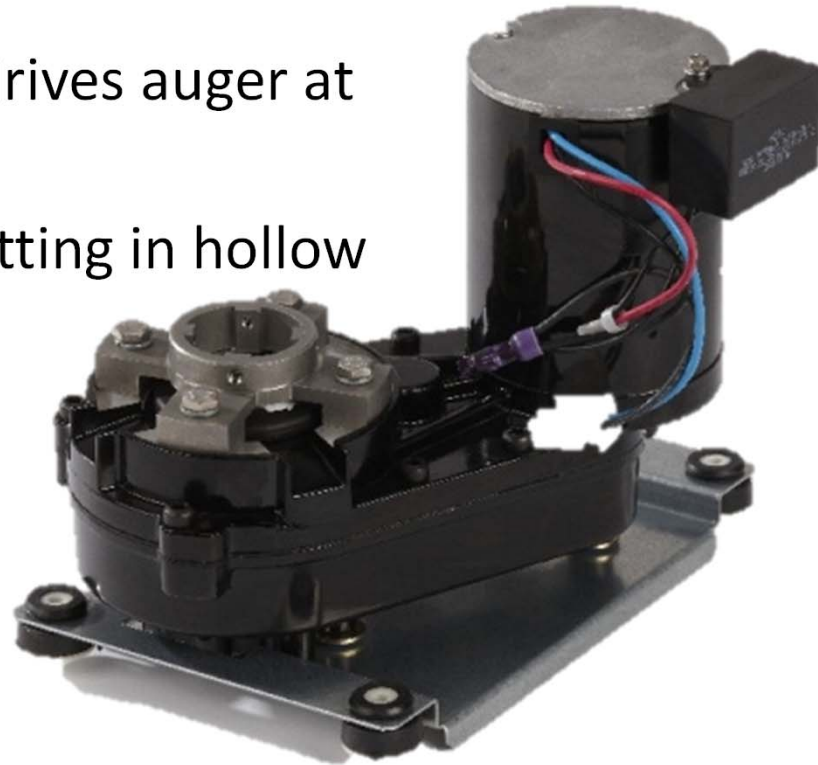
- Combination extruding head and bearing retainer



Ice Making Components

- Gear Reducer

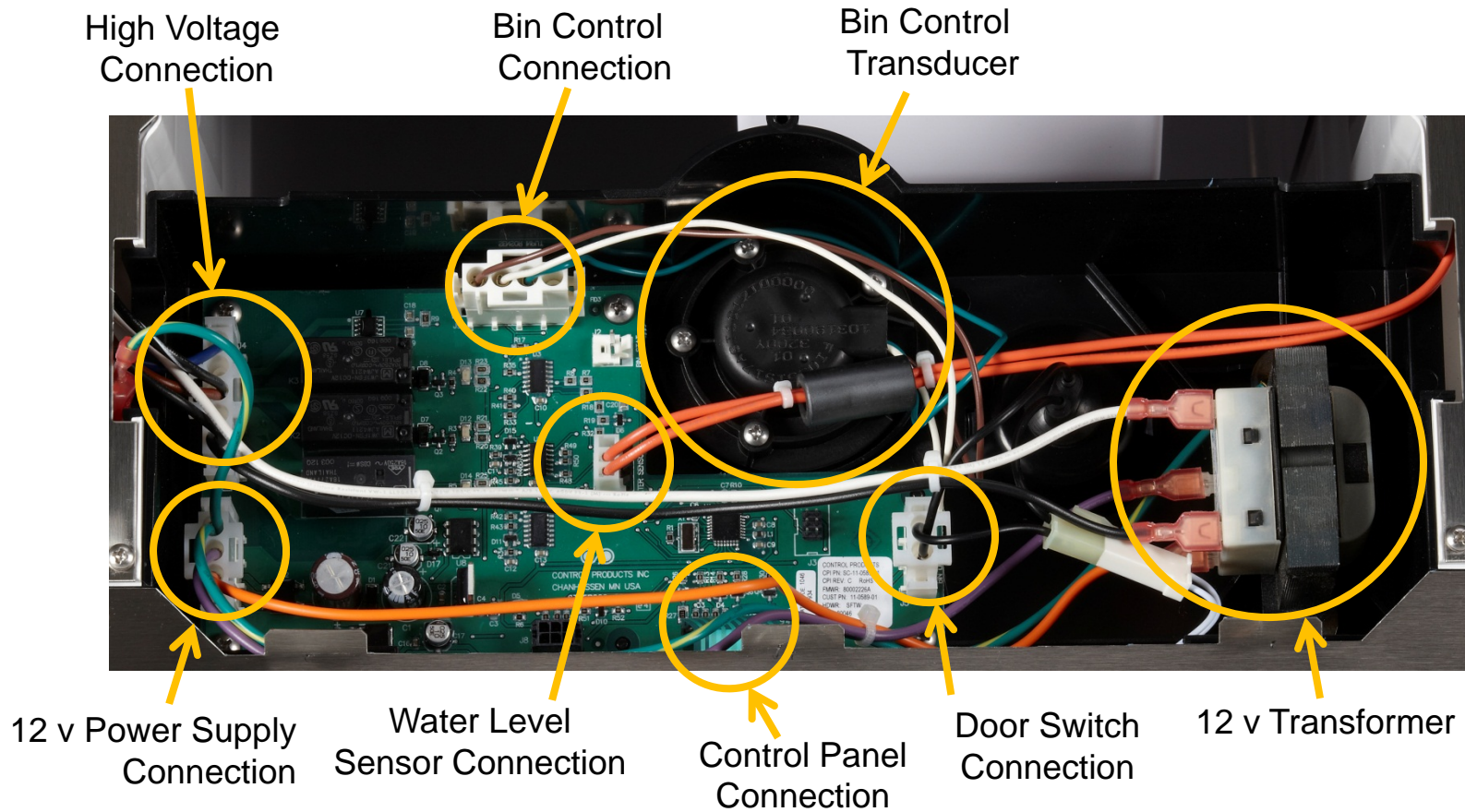
- Auger drive motor drives auger at 11 RPM CCW
- Auger engaged by fitting in hollow output shaft
 - Square Drive



Control System

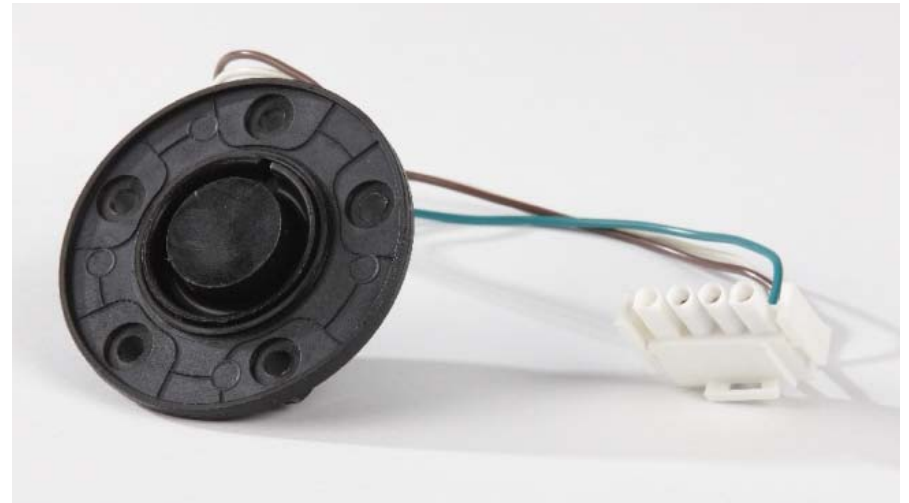
- Transformer - 12 volt secondary
- Controller
 - Operates auger motor and compressor/fan motor
 - Connected to door switch, water and ice sensors
 - Operates door light
- Control Panel – has lights and switches
- Water Level Sensor – water conductivity
- Ice Level Sensor - ultrasonic

Control Box

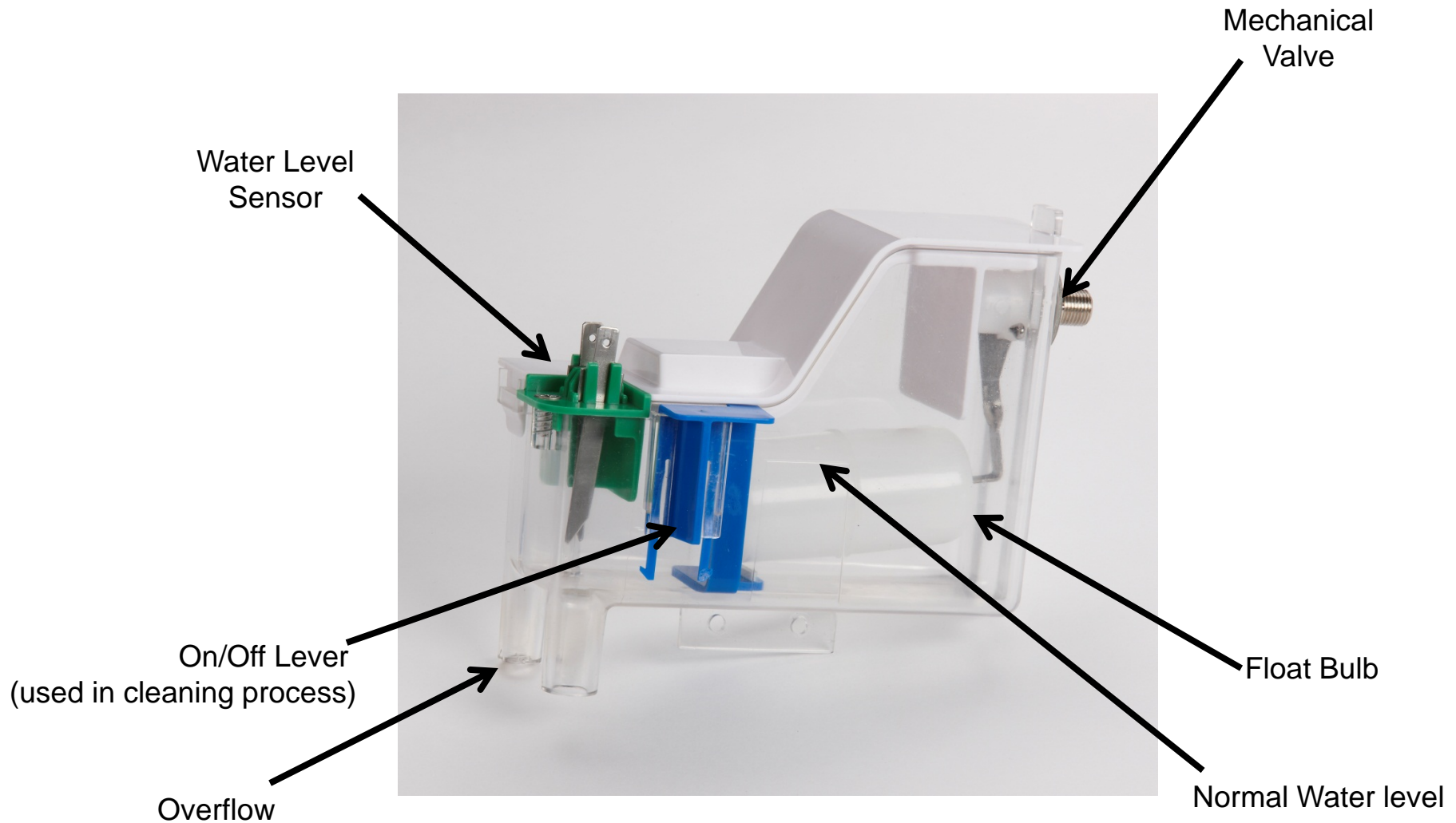


Bin Sensor

- Ultrasonic System
 - Emits high frequency sound
 - Controller measures time to return signal
 - Time tells controller the distance from sensor to ice
 - More time = lower ice level
 - Either on or off, not adjustable



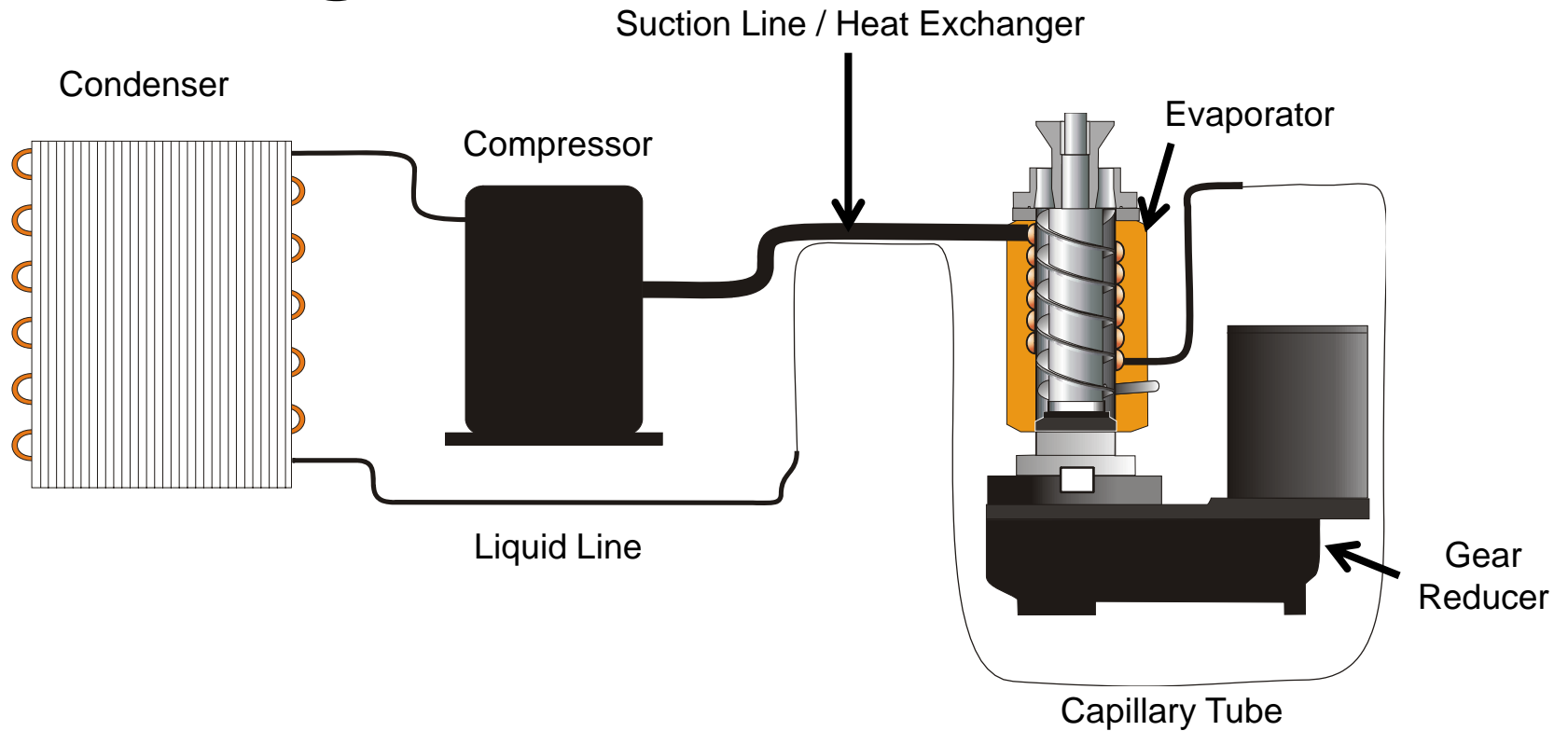
Water Reservoir



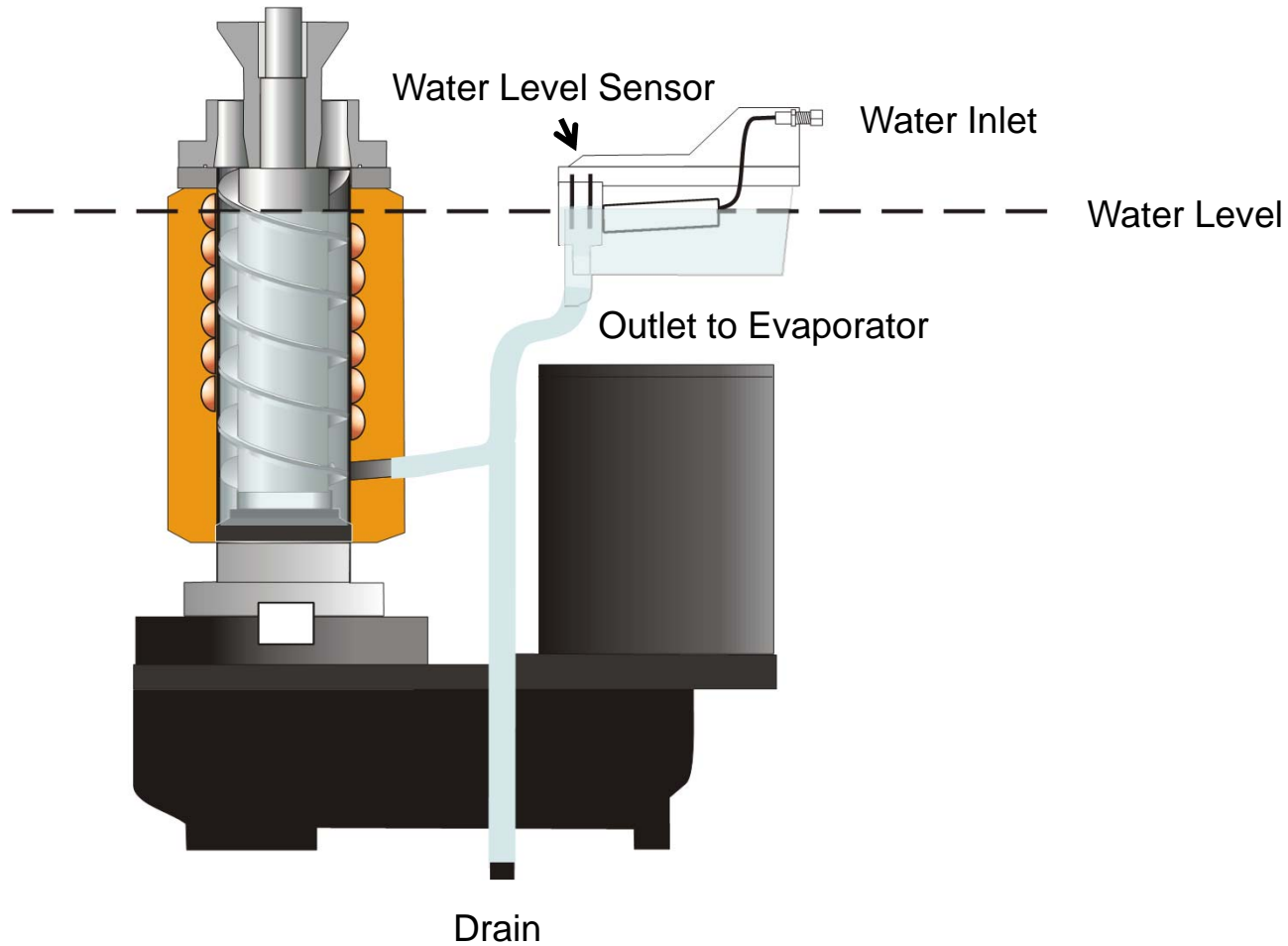
Refrigeration System

- R-134a
 - 4.5 oz charge
- Compressor, condenser same as SCC30
- Cap tube metering device
- Steady-state operation
 - System pressures steady while making ice
 - No access valves, do **not** attach long hoses

How It Works – Refrigeration Schematic



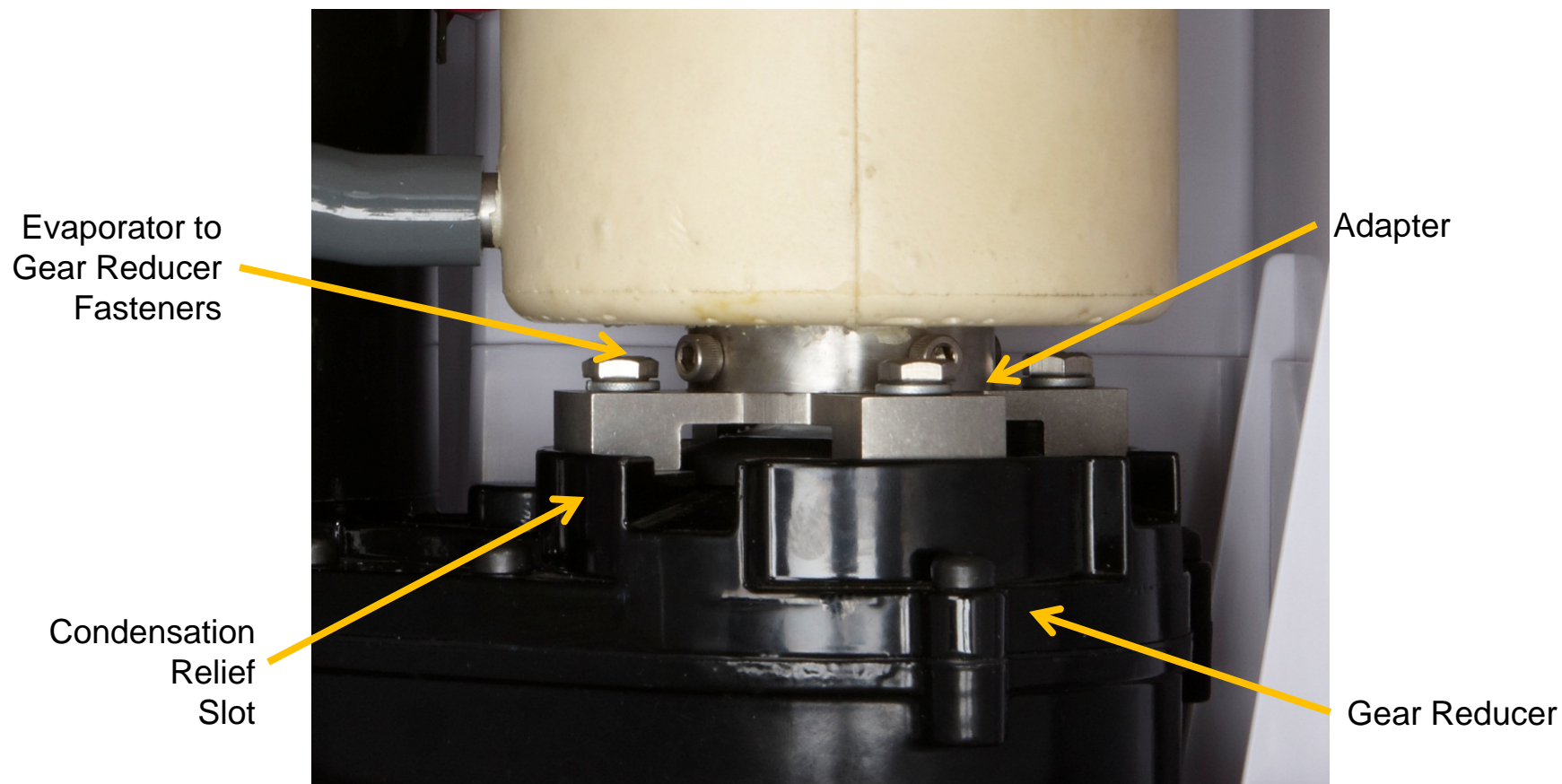
How it Works – Water Schematic



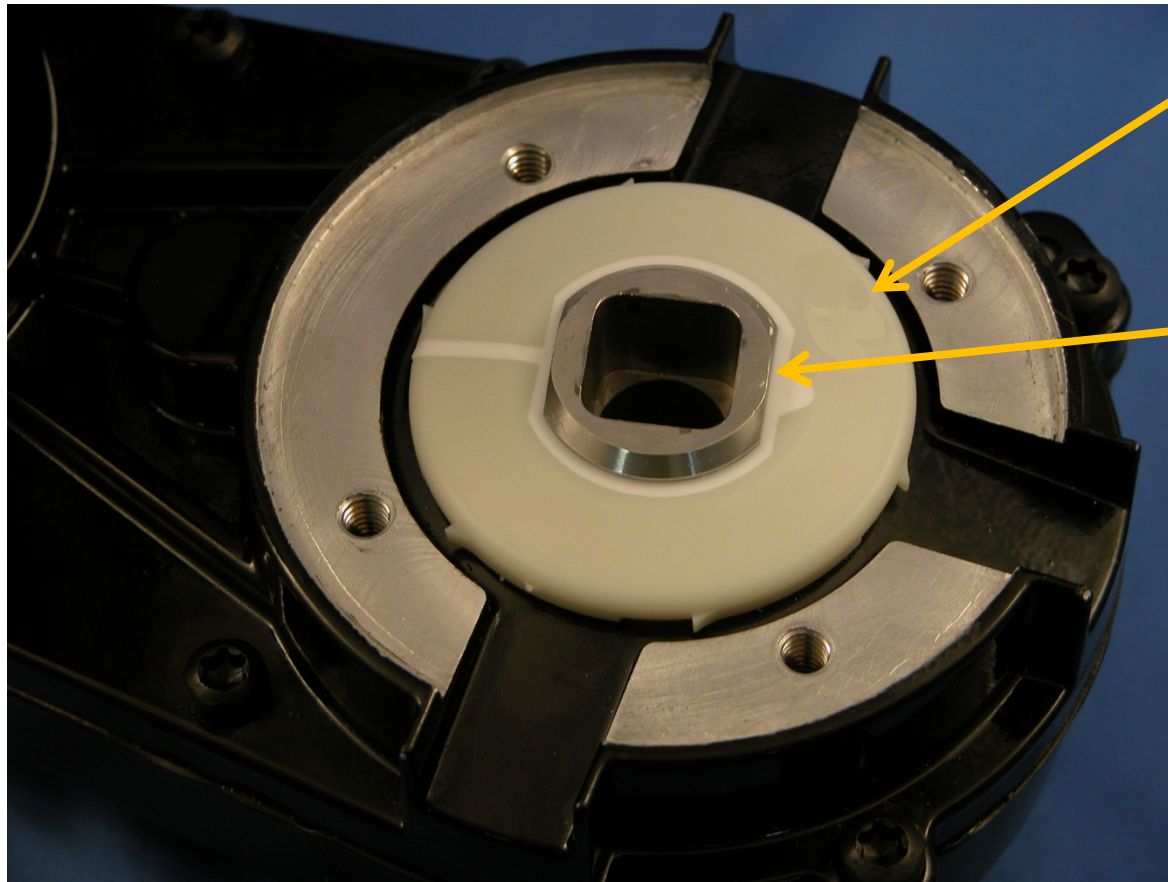
Machine Compartment



Evaporator to Gear Reducer



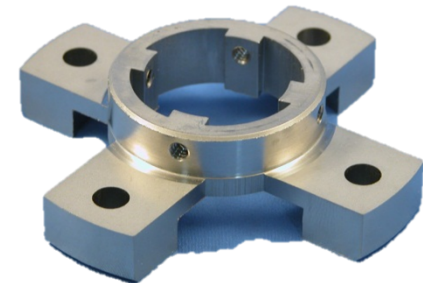
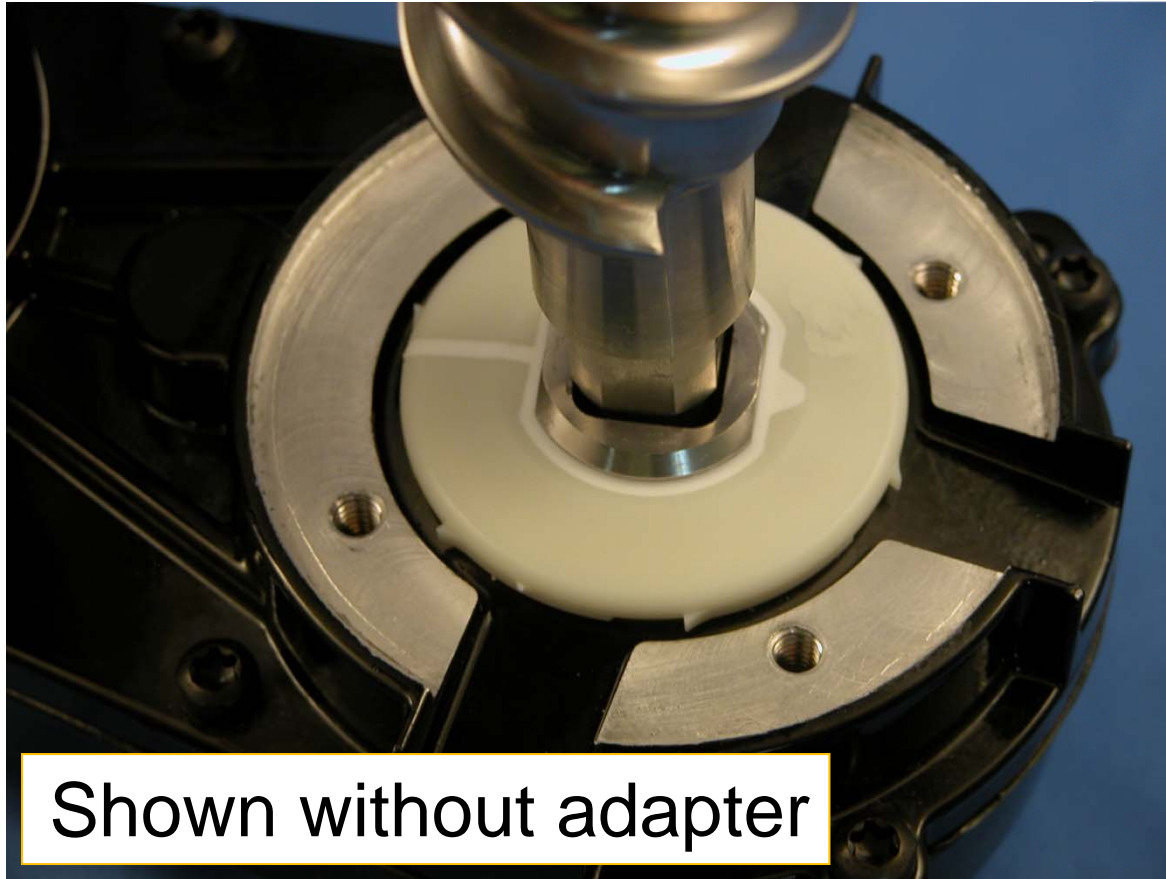
Output Shaft Area



Water Shed

Output Shaft

Auger Engagement



Adapter

Normal Full Bin Ice Level



Maintenance

- Air cooled condenser – service frequently when pets are in the house
 - Remove service panel
 - Remove kickplate
 - Vacuum condenser



Maintenance – Scale Removal

- Hard water scale will form on the ice making surfaces
 - Reduces capacity
 - Increases loads
 - Increases noise
- Scale is commonly limestone
 - Must be dissolved by food grade acid

Scale Removal

- **Begin**
 - Shut machine off
 - Remove back panel of bin
 - Two thumbscrews



Scale Removal - 2

- Locate water reservoir
- Push tab and remove cover



Scale Removal - 3

- Push Float Valve On/Off Lever Up
 - Shuts water off



Scale Removal - 4

- Pull drain plug and drain water system
- Return drain plug



Scale Removal - 5

- Prepare scale remover solution
 - Need 16 ounces of **solution**
 - Will need squirt bottle for built in situations
 - Squirt bottle available premixed – 19-0664-01
- Or
 - Mix Scotsman Clear 1 Scale remover with water
 - Ratio: 1.25 ounces to 16 ounces water



Scale Removal - 6

- Add scale remover solution to water reservoir until it is full
 - About 8 ounces



Scale Removal - 7



- Push and Hold BOTH On/Off and Clean buttons for 5 seconds-Time to clean light will begin blinking

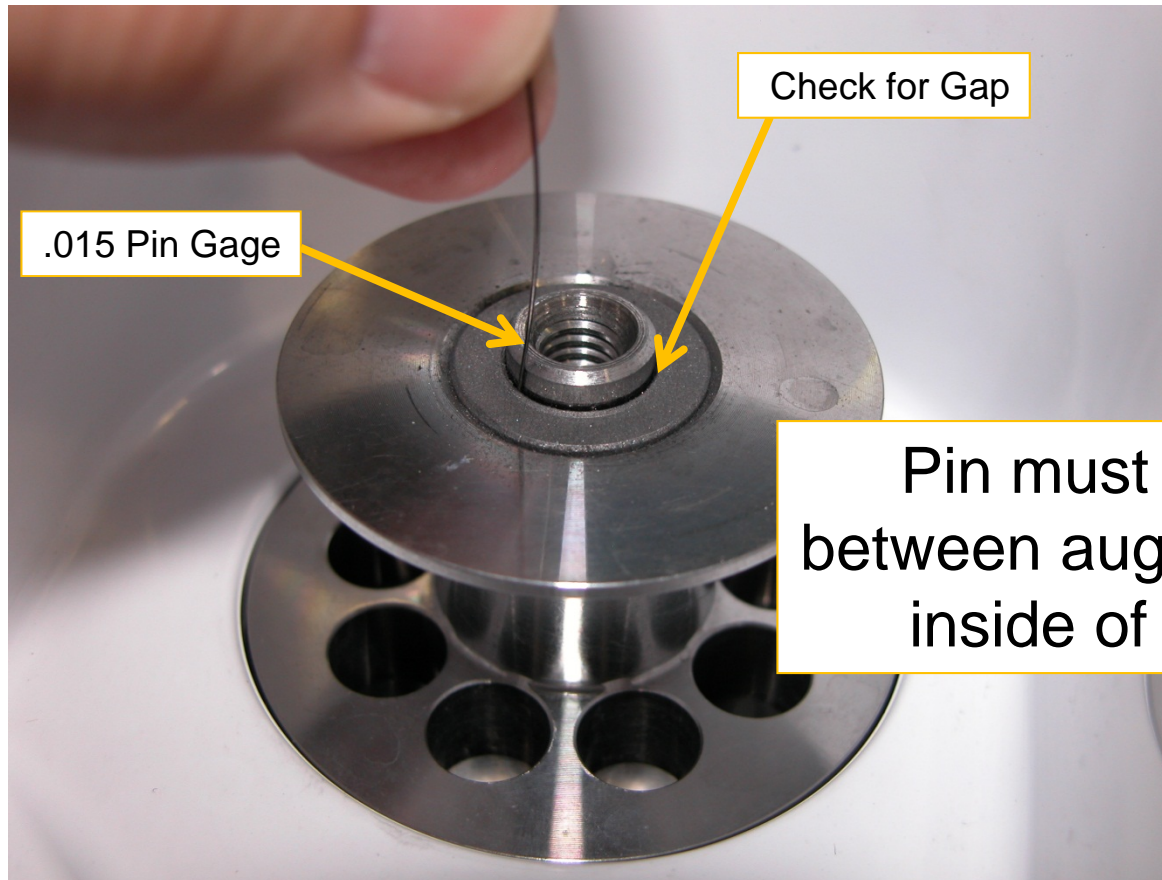
Scale Removal - 8

- Auger motor (only) operates for 10 minutes
- Compressor turns on, ice is made for 40 minutes
 - Must be present to add scale remover solution while unit is making ice
 - After all 16 ounces of solution is used up, push the Float Valve On/Off lever Down to switch the water back on

Scale Removal - Finish

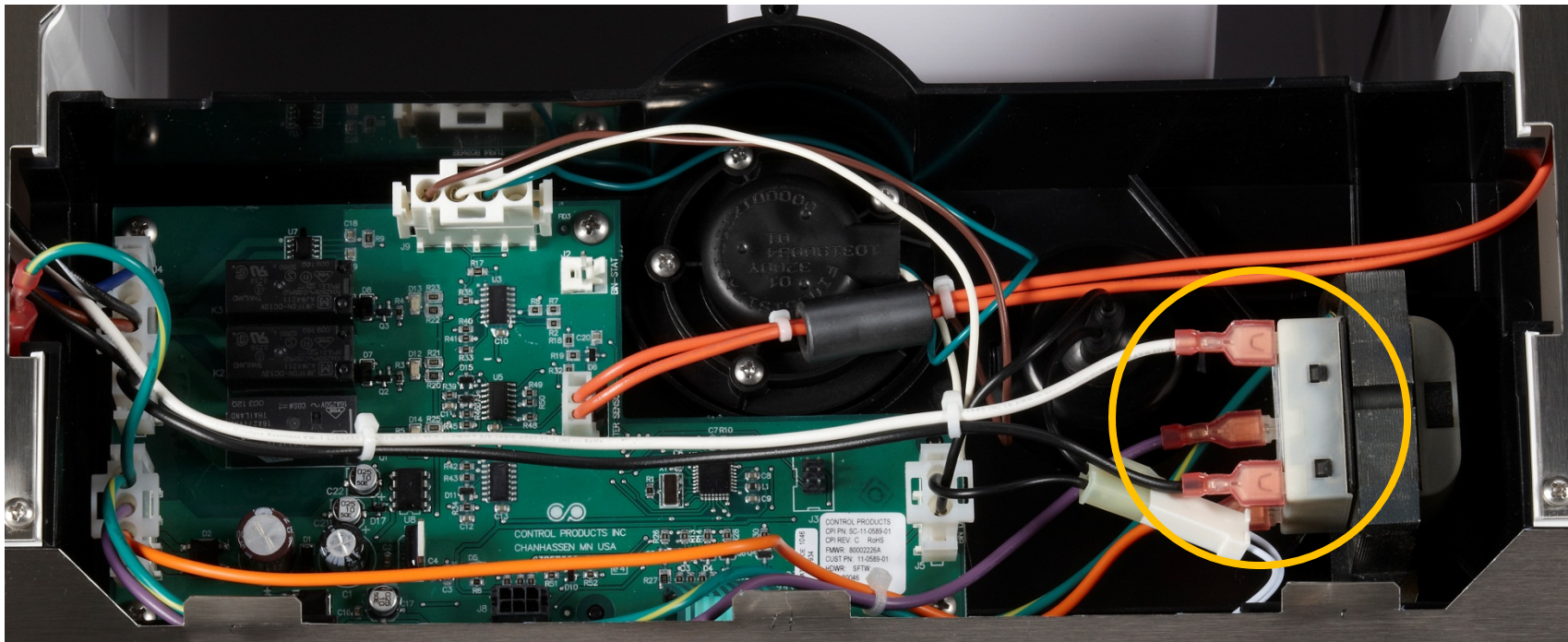
- After machine shuts off
 - Shut water off
 - Drain water system
 - Re-plug drain
 - Switch water back on
 - Replace float cover
 - Rinse bin drain
 - Wipe up loose scale from gear reducer
 - Return bin back panel
 - Push in at bottom to snap in
 - Switch unit back on

Top Bearing Check



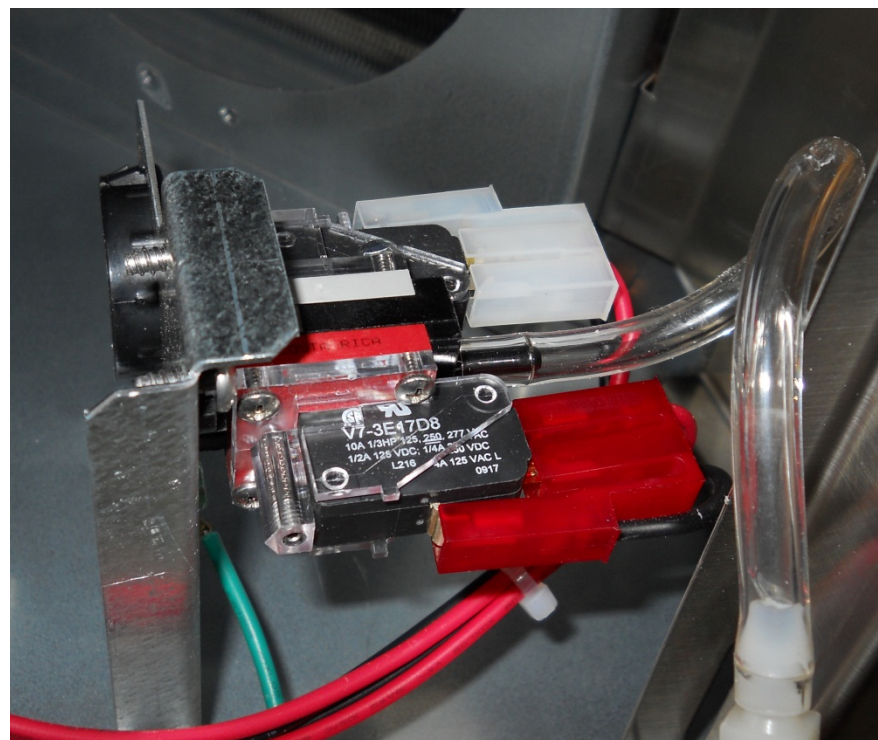
Diagnostics – Simple to Complex

- No Ice – no response at control panel
 - Check power to transformer primary



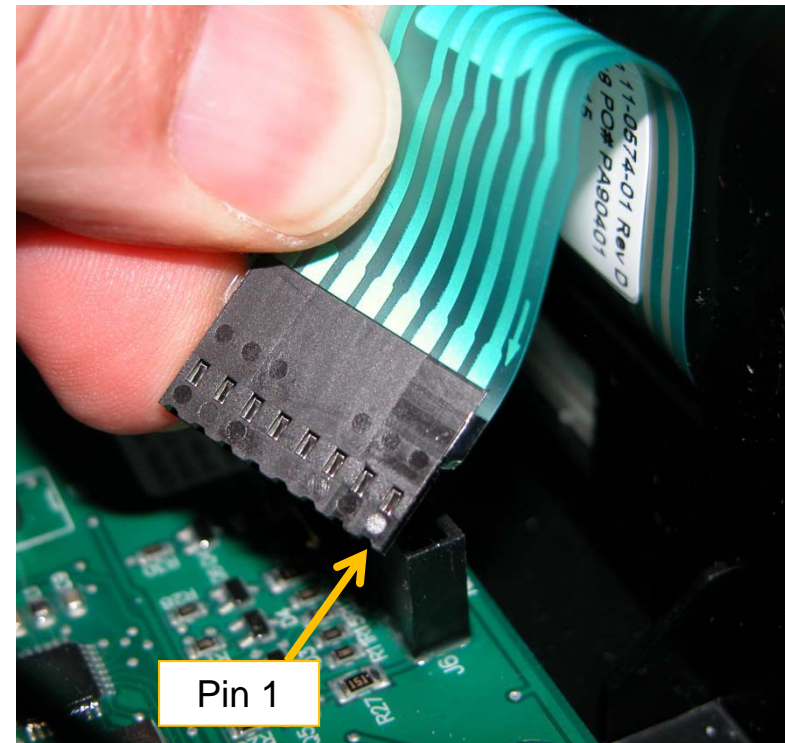
No Power to Transformer

- Power Disconnected
- Pump model – open safety pressure switch
 - Water in bin, pump or drain failure
 - No water in bin, switch failure



No Ice – no control panel response

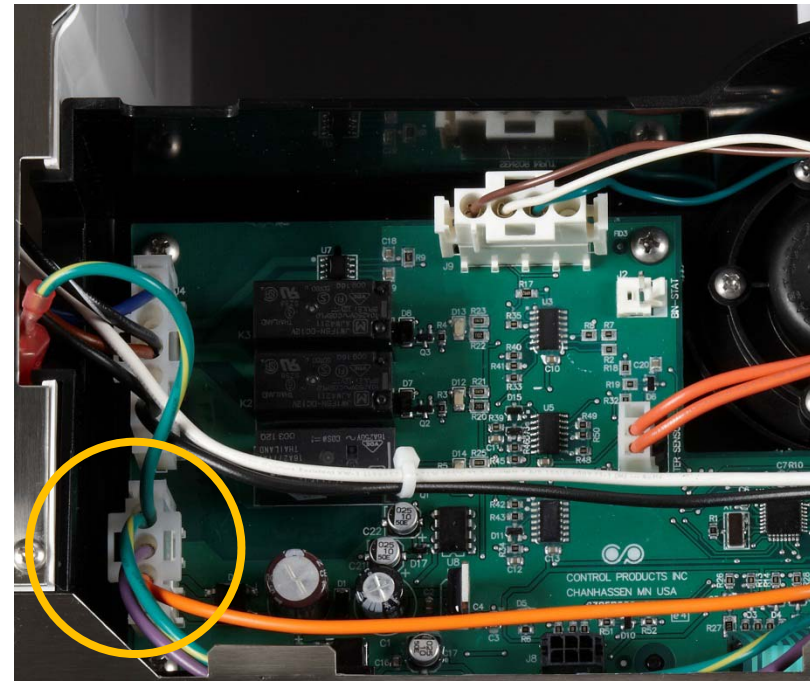
- Power to transformer OK
 - Check secondary for 12 volts AC
 - If OK check control panel
 - Unplug ribbon cable at J6 and check switches
 - (Dot is pin 1), Pin 2-3 On/Off Switch; Pin 4-3 Clean Reset Switch
 - About 10 ohms when activating a button, and Open when not pressing a button



No Ice –

no control panel response

- Control Panel OK
- Check power to controller
 - 12 volts to connection
 - If OK, switch power on and off, if still no response, replace controller



No Ice – no water light is ON

- Check water supply
- Check float valve
- Check water level sensor



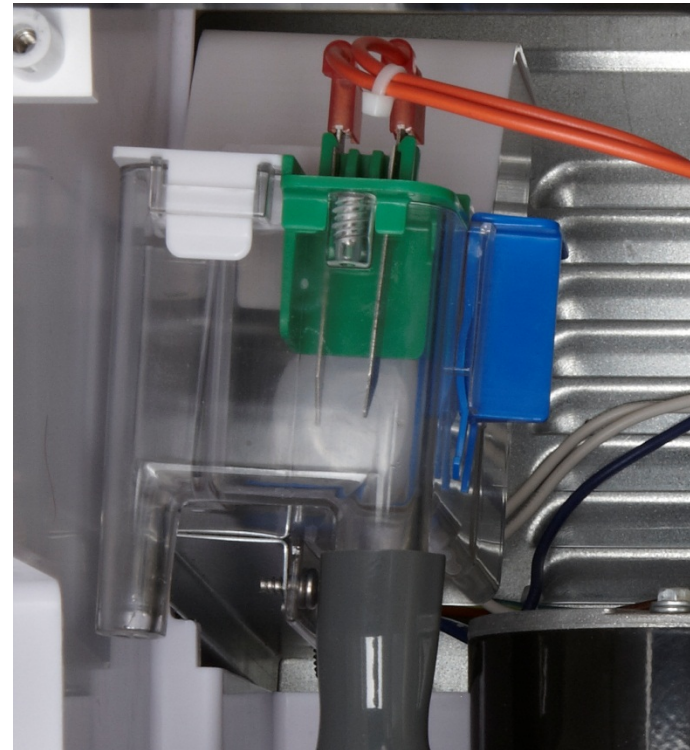
No Ice – Water Check

- Is float down and no water?
 - If float is up and shut off lever is down, valve is not working
 - If yes and water is not flowing in, valve is plugged or not working



No Ice – Water Check

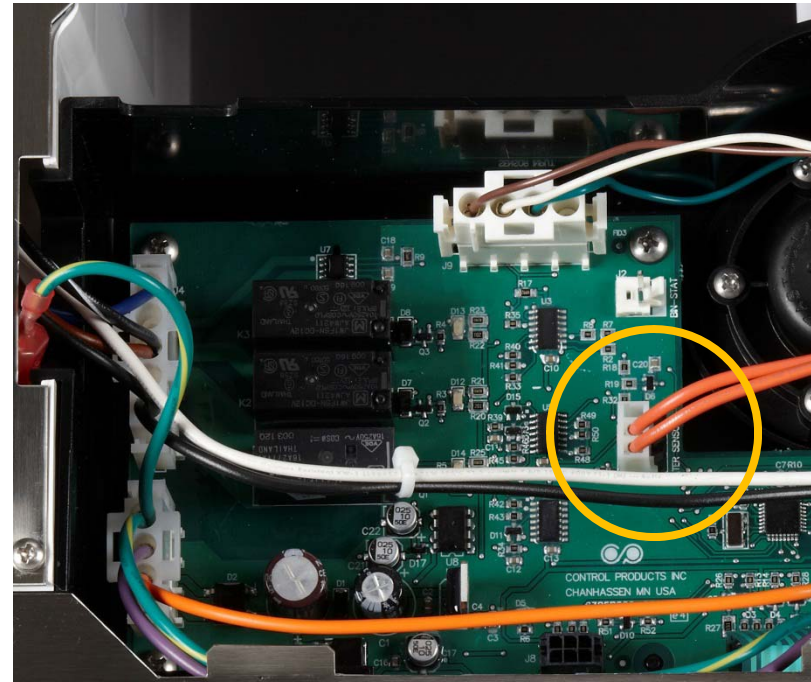
- No Water Light is On, but the reservoir has water
 - Water is too clean
 - Must be 10 microSiemens/cm or more of conductivity
 - Water sensor wire disconnected
 - Controller cannot read



No Ice – No Water Light is ON

- Water Sensor Check

- Unplug sensor at J7
- Short pins 1 & 2 together
- Light should go out

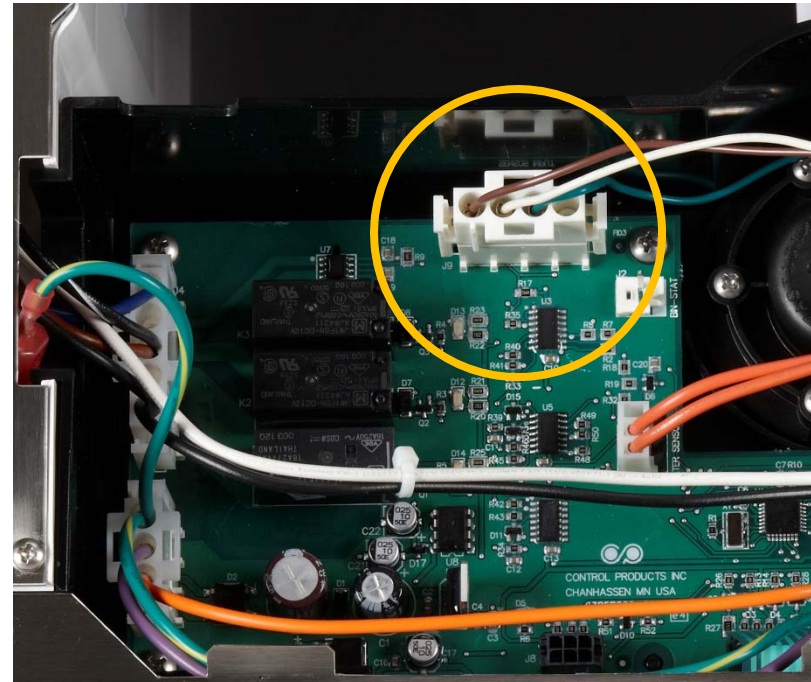


No Ice – Ice Making Light is ON

- Two minute delay after power reset
- Or in restart window
 - 60 second restart attempt time
- Wait or reset controller to check
 - Press Off/On to stop and again to start
 - If does not start, check bin control

No Ice – Ice Making Light is ON

- Bin Control Check
 - Unplug connector at J9
 - Short the middle 2 pins together (green & white wires)
 - Unit should start
 - If yes, replace bin control sensor
 - If no, replace controller



No Ice – Ice Making Light is ON

- Refrigeration System Check

- Compressor and Fan motor **both** off but Auger motor is operating. Check for voltage – controller relay may have failed
- Fan blade not turning – check for free action of fan blade, check motor windings
- Compressor off – check starting components and compressor windings

No Ice – Ice Making Light is ON

- Auger motor, Compressor and Fan are operating, ice sweep is turning, condenser is clean.
 - Possible refrigerant leak
 - Possible compressor valve failure
 - Add temporary access valve to process tube of compressor to check suction pressure – MUST use short hose (6”) or charge will be affected.
 - Suction pressure should be about 8 PSIG

No Ice – 3 Lights Blinking

- Auger Motor Over Amp
 - Lights will blink once every 2 seconds
 - 4 minutes to restart
- Auger Motor Low or No Amps
 - Lights will blink twice every 2 seconds
 - 20 minutes to restart – motor cool down time
- Controller Failure
 - Lights will blink once every 10 seconds

Repair Procedures

- Top panel & machine compartment panel removal is required for many components, including:
 - Gear reducer, auger, breaker, water seal, reservoir, controller, transformer, bin control
 - Shut off and Drain water from evaporator prior to service of any part of it



Removal and Replacement

- Ice making components

- Begin with the ice sweep
- Rotate CCW to remove



Removal and Replacement

- Lift ice chute up and off evaporator



Removal and Replacement

- Remove 4 allen head bolts and lift breaker off evaporator



Removal and Replacement

- Breaker & Bearing

- Bearing is non-metallic and does not require any lubrication
- Bearing can be replaced by driving it out and pushing another in



Removal and Replacement

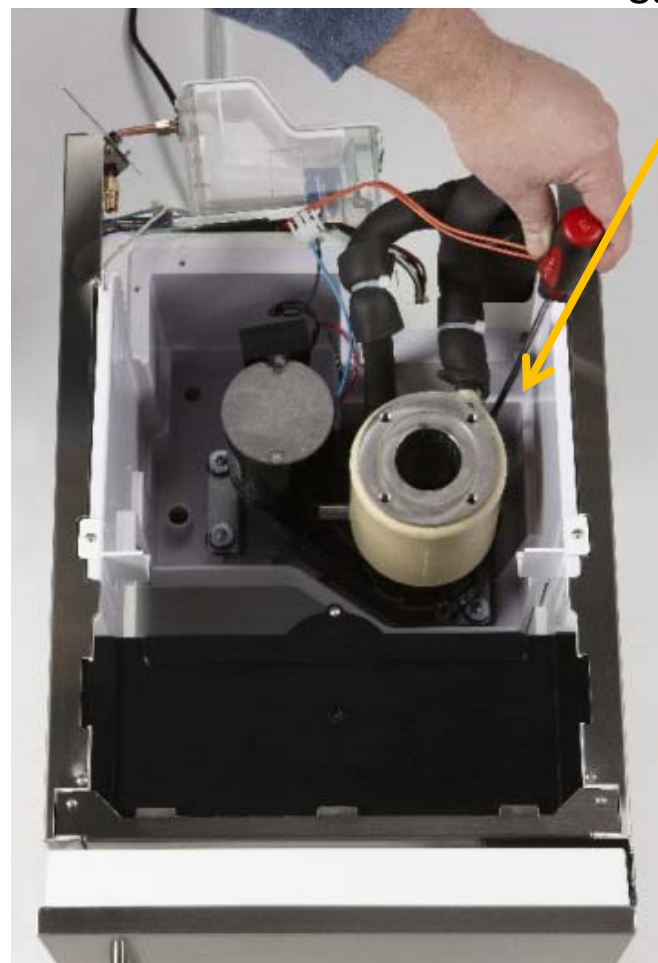
- Lift auger out of evaporator-Be Careful extremely sharp edges!
- Disconnect drain hose from evaporator



Removal and Replacement

- Separate Evaporator from Gear Reducer
 - Disconnect electrical harness from auger motor
 - Remove 4 phillips screws holding gear reducer mounting plate to shelf

Suggest using 16"
Screwdriver



Removal and Replacement

- CAREFULLY lift gear reducer & evaporator up
- Rest on back wall
- Remove 4 allen head screws holding evaporator to adapter



Removal and Replacement

- Separate Evaporator from Gear Reducer
- Remove water seal from evaporator



Removal and Replacement

- Water Seal



Removal and Replacement

- Water Seal – Rotating Half on Auger
 - Remove seal ring
 - Clean auger
 - Add sealant to auger
 - Install new seal
 - Rubber side up
 - Wet rubber
 - Push onto auger
 - Do NOT touch mating surfaces



Removal and Replacement

- Water Seal – Stationary Half
 - Wet outside edge
 - Push into evaporator tube
 - Stop when flush with end of tube



Removal and Replacement

- IF replacing gear reducer, be sure not to overtighten mounting bolts



Removal and Replacement

- Place evaporator tube onto gear reducer
 - Adapter will position water seal to correct depth
 - Secure with the original 4 allen head screws
 - Reattach assembly to shelf
 - Install auger into evaporator tube
 - Reattach breaker to top of evaporator

Summary

- SCN60 is a continuous flow ice machine
- Ice form is chewable Nugget
- 15 inch cabinet
- Air cooled
- Pump or Gravity Drain
- R-134a

Scotsman[®]

Thank you for your time &
continued support of Scotsman!